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U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS Collaborating with

MONTANA AGRICULTURAL EXPERIMENT STATION

IIIIIIIIIIIIIII AS OFIIIIIIIIIIIIII MAR. 1, 1978



Issued by

R.M. DAVIS ADMINISTRATOR
SOIL CONSERVATION SERVICE WASHINGTON, O.C.

Released by

VANK HADERLIE STATE CONSERVATIONIST SOIL CONSERVATION SERVICE In Conqueration with

J. A. ASLESON DIRECTOR Montana Agricultural Experiment Station

PHILLIP E. FARNES, Snow Survey Supervisor DONALD J. HUFFMAN, Hydrologisl CINDY L. ONDRAK, Statistical Clerk

SOIL CONSERVATION SERVICE P.O. Box 98 Bozeman, Montana 59715





The mountain snowpack is accumulating at average or above average amounts, assuring Montana a good water supply this season. This season's snowpack is generally ? to 3 times greater than last year's.

UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE P.O. Bo. 98 Bozewan, Mohiaha 59715 OFFICIAL BUSINESS OFFICIAL BUSINESS



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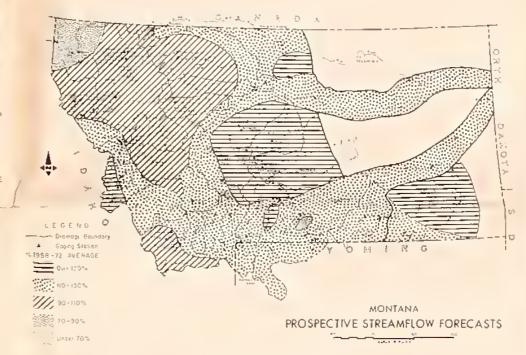


Montana Water Supply Outlook

MOUNTAIN SNOWPACK

THE SNOWPACK IS GENERALLY NEAR OR ABOVE AVERAGE. SOUTH-WESTERN DRAINAGES SHOWED CON-SIDERABLE IMPROVEMENT DURING FEBRUARY. TWO AREAS SHOW BELOW AVERAGE SNOWPACK: ONE NEAR LIBBY AND THE OTHER NEAR RED LODGE, COOPERATORS REPORT AN

ABNORMALLY HEAVY SNOWPACK IN MOST EASTERN PRAIRIE AREAS. HEAVY MOUNTAIN SNOWPACKS ARE FOUND IN THE UPPER REACHES OF THE BITTERROOT, BIGHOLE, MADISON AND YELLOWSTONE RIVER DRAINAGES.



STREAMFLOW FORECASTS

APRIL THROUGH SEPTEMBER STREAMFLOW IS FORECAST TO BE AVERAGE OR ABOVE FOR MOST STREAM SYSTEMS. THE KOOTENAI RIVER AND RED LODGE CREEK ARE PREDICTED TO HAVE BELOW AVERAGE RUNOFF. NEAR AVERAGE RUNOFF IS EXPECTED FROM THE CLARK FORK, BLACKFOOT AND FLATHEAD RIVERS WEST OF THE DIVIDE; BEAVERHEAD, DEARBORN, SUN, TETON, AND

MARIAS RIVERS EAST OF THE DIVIDE; AND THE ST. MARY'S RIVER THAT FLOWS INTO HUDSON

WELL ABOVE AVERAGE FLOWS ARE FORECAST FOR THE BITTERROOT AND STREAMS DRAINING SMALL HOUNTAIN RANGES IN CENTRAL MONTANA.

IRRIGATION WATER SUPPLIES ARE EXPECTED TO BE AVERAGE OR ABOVE IN MOST AREAS.

PLEASE NOTE

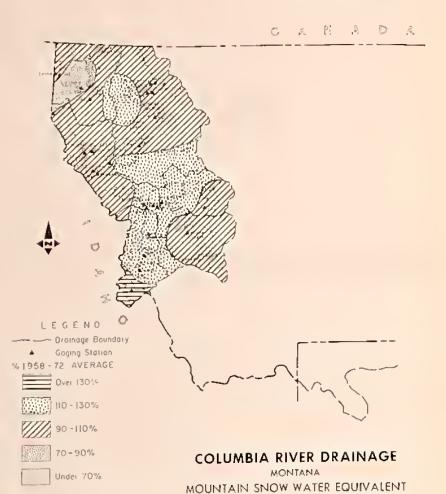
The Water Supply Outlook for Montana will be issued issued on this format. We hope it will serve your needs. Our reasons for going to a newspaper-style format are reduced cost, faster printing and reduced preparation and mailing time.

The Statewide Water Supply Outlook and the 13 watershed reports have been combined into one report. Each fall an October 1 report will be issued using the old book-style format. The October 1 report will include all snow course measurements for the previous snow season, and Other pertinent snow pillow, soil moisture and precipitation readings. The fall report will also include a map showing snow course locations and elevations. Maps showing snow course locations will not be included in any of the monthly newspaper-style reports. For this year only, a statewide map of snow course locations can be requested by writing to: Snow Survey Supervisor, Soil Conservation Service, P. O. Box 98, Bozeman,

The mailing list for this Water Supply Outlook has been obtained by combining the mailing lists from the State Water Supply Outlook and the 13 watershed reports. All recipients will receive the Water Supply Outlook issued January 1, February 1, March 1, April 1, May 1, May 15, and June 1 of each year.

If you do not wish to receive future reports please let us know and we will remove your name from our mailing list. Purge cards will be mailed this spring. Those who do not return these cards will be dropped from the mailing list.

Columbia River Drainage



SUMMARY OF SNOW MEASUREMENTS

TCO-FERRISON WITH PREVIOUS 15	MAI!		
RIVER BASIII	Number of Courses	MATER AS	AR'S SNON PERCENT OF
SUB-MATERSHED	Astropra	Lett Tree	Ar elege †
Kootenai/BC	24	199	90
Rootenai/Mont	17	289	93
Kootemai	41	241	92
Little Bitterroot	4	392	115
Flathead	31	224	104
Clark Fork ab.			
Blackfoot	21	286	110
Blackfoot	15	256	106
Clark Fork ab			
Missoula	36	271	108
Bitterroot	10	320	120
Lower Clark Fork	1	1	
bl. Missoula	14	292	99
(1.7)	[
w/o Flathead)	60	289	107
Pend O'Reille			
(Clark Fork and			
Flathead)	91	260	106
Columbia (Pend			
O'Reille & Root)	122	249	100



MOUNTAIN SNOWPACK

KOOTENAI - GENERALLY AVERAGE TO SLIGHTLY BELOW AVERAGE OVER MOST OF THE MONTANA PORTION, AND SLIGHTLY BELOW IN BRITISH

COLUMBIA. FLATHEAD - GENERALLY NEAR AVER-AGE, BUT A LITTLE ABDVE IN THE SOUTHERN POSTION AND WEST OF KALISPELL, BLACKFOOT - ABOVE AVERAGE OVER

NORTHWESTERN TWO-THIRDS OF DRAINAGE TO AVERAGE OR BELOW UPPER CLARK FORK - GENERALLY NEAR AVERAGE, BUT VARIABLE BETWEEN VARIOUS MOUNTAIN RANGES, ABOVE AVERAGE ALONG THE BITTERROOT AND BIGHOLE
DIVIDE.
BITTERROOT - ABOVE AVERAGE ALONG

THE NORTHERN PART INCREASING TO WELL ABOVE AVERAGE IN THE SOUTHERN DRAINAGES.
LOWER CLARK FORK - NEAR AVERAGE.



	Flow F	errod
STREAM OF AREA	Splint Seeton	Call Science
Tobacco River	Av	Av
Little Bitterroot	Av	Av
Mission Valley	Av	Av
Flint Creek	Av	Av
Opper Clark Fork	Av	Av
Nevada Creek	Av	Αv
Blackfoot	Av	Av
West-side Bitterroot	Ex	Ex
East-side Bitterroot	Av	Av
Bitterroot River	Ex	Ex
Lower Clark Fork	Av	Av

IRRIGATION WATER SUPPLIES

ALL STREAMS SHOULD HAVE ADEQUATE EARLY SEASON SUPPLIES. LATE SEASON SUPPLIES ABOUT AVERAGE,

EXCEPT FOR ABOVE AVERAGE ON THE BITTERROOT RIVER.

SOIL MOISTURE

SOILS UNDER THE SNOWPACK HAVE ABOUT AVERAGE MOISTURE LEVELS SOUTH DF A LINE FROM THE BLACKFOOT-FLATHEAD-SUN RIVER DIVIDE TO THE POINT WHERE THE IDAHO-MONTANA-BRITISH CDLUMBIA BORDERS MEET. THE AREA NORTH

DF THIS LINE GENERALLY HAS BELOW AVERAGE MOISTURE LEVELS, SDIL MOISTURE IS BASED ON MOISTURE LEVELS AT SOIL
MOISTURE STATIONS, FALL PRECIPITATION AND STREAMFLDW LEVELS
DURING THE EARLY WINTER PERIOD.

STREAMFLOW FORECASTS

KOOTENAI - GENERALLY 10 TO 15 PERCENT BELOW AVERAGE,
FLATHEAD - NEAR AVERAGE RUNOFF ON ALL TRIBUTARIES. BLACKFOOT - NEAR AVERAGE RUNOFF FOR MOST TRIBUTARIES. UPPER CLARK FORK - A LITTLE BELOW AVERAGE IN THE EXTREME HEAOWATERS NEAR ANACONDA AND SOUTH OF BUTTE, AVERAGE OR

ABOVE FOR OTHER TRIBUTARIES. BITTERROOT - WELL ABOVE AVERAGE FROM WEST-SIDE AND HEAD-WATERS. ABOVE AVERAGE FROM MOST EAST-SIDE STREAMS. LOWER CLARK FORK - NEAR AVERAGE RUNOFF FROM LOCAL STREAMS AND SLIGHTLY ABOVE AVERAGE FLOW IN THE CLARK FORK RIVER,

	5.04	CASI	R.H.		T CORD
BASH STULAU CONTROLLANT POINT			LOSTCAST	THOUSAND A	
33 34 37 7 0111	Thous mid Acre Filis	Process at Average	PL HILLD	1 111 7 1 11	^::::e
KOOTENAI RIVER below Libby Dam (1)	6,600	89	Apr~Sept	3,976	7 656
, (4)	5,650	88	Apr-July		7.456
	4,400	88		3 043	6,417
FISHER RIVER near Libby			Apr-June	2,469	5,011
110 MEN METER MEGI DIDDY	258	90	Apr-Sept		286
ALL ALL DAVING	245	91	Apr-July		269
YAAK RIVER near Troy	475	84	Apr-Sept		568
	450	83	Apr-July		544
KOOTENAI RIVER at Leonia (1)	8,150	90	Apr-Sept	4.910	
***	7,170	90		1	9,073
			Apr-July	3,844	7, 957
INFLOW MOULTON RESERVOIR near	5,800	90	Apr-June	3,050	6,431
	240	109	Apr-June	103	220
Butte (Million Gallons)					i
WARM SPRINGS CREEK AT MEYERS DAM	48.8	96	Apr-Sept	16.0	50.9
rear Anaconda (2)	40.0	96	Apr-July	14.0	41.8
FLINT CREEK near Southern Cross	18.5	109	Apr-Sept	9.0	
(3)	15.8	110			16.9
FLINT CREEK below Boulder Creek	77.0		Apr-July	7.0	14), 3
(4)		108	Apr-Sept		71, 6
	61.5	110	Apr-July		56.1
INFLOW LOWER WILLOW CREEK RESERVOIR		108	Apr-Sept	3.4	16, 2
near Hall (5)	16.8	109	Apr-July	2.9	15.4
HIDDLE FORK ROCK CREEK near	90.0	119	Apr-Sept	,	75.9
Philipsburg	82.0	120	Apr-July		
NEVADA CREEK near Finn	22.5	104			68, 6
1 4111			Apr-Sept		21, 6
PLACEFOOT PIVED P	21.0	104	Apr-July		20.1
BLACKFOOT RIVER near Bonner	1,070	104	Apr-Sept		1,031
	970	104	Apr-July		934
	840	103	Apr-June		814
CLARK FORK RIVER above Milltown	870	110	Apr-Sept		7-92
(7)	770	111	Apr-July		
1. 6	660	112			690
CLARK FORK RIVER above Missoula			Apr-June		590
CLARK FORK RIVER ABOVE MISSOULA	1,940	106	Apr-Sept	573	1,823
	1,740	107	Apr-July	473	1,624
	1,500	107	Apr-June	408	1,404
WEST FORK BITTERROOT RIVER near	235	137	Apr-Sept		172
Conner (7)	220	141	Apr-July		156
BITTERROOT RIVER near Darby	800	137	Apr-Sept	242	584
	7,50	138	Apr-July	206	
a to the on the sec	660	138	*	204	1,3,1,542
SKALKAHO CREEK near Hamilton	65.0		Apr-June	176	1.479
State of the state of the state of		115	Apr-Sept		56.6
DUDUM TORK OPPRIL O. (11	58.5		Apr-July		49.6
BURNT FORK CREEK near Stevensville	42.7		Apr-Sept		35.3
(8)	37.5		Apr-July		31.0
BITTERROOT RIVER at Missoula (9)	1,980	130	Apr-Sept		1,527
	1,860	132	Apr-July		1,412
	1,610	130	Apr-June		1,236
CLARK FORK RIVER below Missoula	3,920	117	Apr-Sept		3,350
	3,600		Apr-July		3,036
	3,110		Apr-June		
CLARK FORK RIVER at St. Regis				7 507	2,640
	4,990		Apr-Sept	1,507	4,597
(NWS)	4,520		Apr-July	1,286	4,087
	3,950	111	Apr-June	1,133	3,563
NORTH FORK FLATHEAD RIVER near	1,900	95	Apr-Sept		1,991
Columbia Falls	1,730		Apr-July		1,813
	1,480		Apr-June		1,551
NIDDLE FORK FLATHEAD RIVER near	1,960		Apr-Sept	1,011	1,917
West Glacier	1,810				
			Apr-July	874	1,768
COURT FORK FLITHER BYIER	1,540		Apr-June	779	1,5,14
SOUTH FORK FLATHEAD RIVER near	2,470		Apr-Sept	1,255	2,378
Columbia Falls	2,320	104	Apr-July	1,143	2,240
	2,020		Apr-June	1,059	1,984
FLATHEAD RIVER at Columbia Falls	6,470		Apr-Sept	3,180	6,421
(10)	6,030		Apr-July	2,809	5,942
SWAN RIVER near Big Fork	5,250		Apr-June	2,547	5,151
OWN KIATK HEAT DIR LOLK	755		Apr-Sept		7.1.7
PI AMUDAN NAVEN	675		Apr-July		630
FLATHEAD RIVER near Polson (11)	7,800	102	Apr-Sept	3,600	7,648
	7,285	103	Apr-July	3,165	7,082
	6,150		Apr-June	2,871	6,113
CLARK FORK RIVER near Plains	13,200		Apr-Sept	5,237	12,691
(11) (NWS)	12,100				
			Apr-July	4,541	11,523
THOMPSON PILED Th	10,430		Apr-June	4,072	9,934
THOMPSON RIVER near Thompson	282		Apr-Sept		277
Falls	255		Apr-July		248
PROSPECT CREEK at Thompson Falls	145	99	Apr-Sept		147
	137		Apr-July		137
CLARK FORK RIVER at Whitehorse	14,400		Apr-Sept		14,090
Rapids (12)(NWS)	13,100		Apr-July		12,860
	11,310		Apr-June		
	-1000		ubr-anne		11,092

(1) Adjusted for storage in Lake Koocanusa.

(2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake. (3) Adjusted for storage in Georgetown Lake, diversions from and pumping to

Silver Lake. (4) Sum Flint Creek at Maxville and Boulder Creek at Maxville.

Creek mear Hall

(5) Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow (6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner. (7) Adjusted for storage in Painted Rocks Reservoir. (8) Adjusted for diversion into Sunset Highline Canal. (9) Difference in observed flow Clark Fork above and below Missoula. (10) Adjusted for storage in Hungry Horse Reservoir. (11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake, (12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoirs. (NWS) Forecast made by National Weather Service. Average based on 1558-72 period.

SHOW			INISTEAR	V PAST € E	ECORD)	SHOW					
ORAINAGE BASIN md+ or SNOW COURSE NAME	Elevanor	Olle el Suree _l	Show Depth Welli Content	Helli Conte	VINOIS VI IOCOLL		DO ATMAGE BASIN INS OF SHOTH COURSE	Elevation	One el Sen er	Stow Dreib HA(0e1)	* elet Control Hethiri	Helii Costen
AMBROSE ANGH FALLS	6480 7 3 50	5/51	40 12.8 43 11.9	4.7	11.7		HOLDROOK	4530	2/27	11	10.0	5.7
BADGER PASS BALD EAGLE PEAK	6900 5700	2/25	85 34.3 127 48.3	17.6 19.0	37.11 60.1		HODOUG BASIN PALLO	6600 6000 14100	2/27 3/n/j	122	1.0 • 1 46.7	4.0 [4.0
HALD HOUNTHIN (NY) BALD RIDGE	9600 7500	5/25	84 26.3 48 14.2	19.8	19.1		I ILEPENDENCE	5 : 0 u 7 8 5 u	3/03	116	43.4	14.0
BANFIELD MOUNTAIN PILLON	5600 5600	2/24	50 18.7 SP 16.1	5.2 5.8	23.2		ISLAND PARK (ID)	6450	3/01	59 31	F9.2	5.h
HAREE CREEK	5500 46.00	2/28	103 39.8 9B 31.9	19.5 16.5	43.6 34.6		JAPRKE LAKE 18ATI	6310 7500	2/27	61 36	0.8	5.X 2.2
BAREE TRAIL JE BASIN CREEK	3800 7180	2/28	35 11.0 30 5.8	1.0	10.5		KELLER CREEK	7200 6450 3300	5/59 3/01	39	18.9	2.9 3.0
A BASSOO PEAK	5150 6020	3/01 2/2a	41 12.4 39 12.8	1.9 4.0	7.0		KINGS HILL	6200 7500	2/22	43	11.4 14.0	3.0
BEAR BASIN BEAR MOUNTAIN (ID)	8150 5400	3/01	75 26.1 119 9.1	11.7	19,4 59,1		KINANIS CAMP	389n 3720	5/58 5/58	53 35	9.11	7.6 1.1
BEAR PAW SKI AREA BEAVER LAKE	5200 5900	2/23	39 11.2 61 22.6	6.6 9.b	6.3		LAKE CREEK	7A5U 610U	2/23	26 47	- 6.4 12.3	2.0
∠ BERRY MEAGOW → B14 COULER → B14 CO	7000 5100	2/29	35 8.3 36 9.9	2.1	7.5		LAMEVIEW CANYON	14930 7480	2/2a 2/2a 2/2a	311	9.9	5.1 2.1
BIG CREEK	6 7 50 7 70 0	5/59	127 45.5 61 17.7	≥0.3 3.5	41.7		LICK CREEK PILLOW	6860	5707	39 39	9.9	2.0 4.3
BIN SKY MEADOW	6350 7150	3/01	42 9.8 78 27.8	4.7 15.8	8.0 15.11		LITTLE PARK LOI-AT, TREEK	7400 4300	2/27 3/01	160 213	7.3	7.1
TBIG SPRINGS (IH)	6500 7950	2/27	70 23.5	6.U	18.6		LOCO PASS (10)	5230	2/27	31 86	9.7 31.11	8.5
⊕BLACK BEAR PILLOW PHBLACK PINE	7590 710 0	2/24 3/01	SP 77.4	10.7 4.8	11.9		LOUKOUT FID) LOST HORSE	888(i 5250	2/28	77 90	33.0 0.88	9.7 [0.B
ARPACK BINE BIFFUM	7100 7600	3/01 3/01	SF 14.6	5, li	11.7		LOST SOOL LOWER TWIN	594(I 4A0(I	2/22	4.4 	32.9 15.7	12.0
SHENE FAKE	7600 5900	3/01	SP 13.1 57 20.6	4.2	26.4		LUSHECRT FLUME LUSHECHT FOREST # 3	7900 4200	2/27	611 25	7.1	5.u
"PUTS SOTS "BOULDER MOUNTAIN	6000 7950	5/52	28 5.2 65 22.1	3.5 7.4	16.3		LUBRECHT FUREST # 4 LUBRECHT FUREST II 6	5950 4650	2/27	28 15	8 • 1 H • U	3.3 1.2
BOR RIVER HI (AL) HON CANYON	5100 6670	2/2B 2/27	3II 7.8	4 4 5 S	в.1		FURRICHT HYDROPLOT	4040 4200	3/02	22	5 • 7 7 • 0	1.8
8 BRANHAM LAKES "HBRIDGER BOWL	8850 7250	2/27	86 30.2 87 31.2	10.4	25.9 26.1		MANISON PLATEAU PILLOW	7300 7750	575# 875#	47 67	25.9	4.4
BRIOGER BOWL PILLDA # BRISTOW CREEK	7250 3900	2/20	SF 28.9 35 11.2	14.0	24.3 13.7		MANY GLACIER PILLOW	7750 1960	2/34	80 56	20.8	8.0 7.5
HARUSH CREEK TIMBER	5000 6600	2/27	34 11.0 30 5.0	2.0 3.4	10.2		MARIAS PASS MAYNARD CHEEK	4960 5250	3/07	5P 51	19.1	7.4
PRUPGESS R.S. #2 (MY)	7900 5200	2/27	36 8.3 36 9.2	8.4	7.3		PAYMARD CREEK PILLOW "EADOW CREEK PILLOW	6210 5210	5\50 5\50	2h 85	50.3	8.11
U CALVERT CREEK CALVERT CREEK PILLOW	6450 6450	3/02	49 14.9	3.1 3.2	9.1		MICE CREEK	1600 7850	2/27	65 2h	14.7	5.3 4.9
LCAMP CREEK (10) HCAMP MISERY	6800 6400	5/54	37 9.3	3.4	9.0		PINCHAL CREEK	7500 4000	2/27	50	14.5 16.8	9.0 4.1
MICAMP SENTA CAMYON (NY)	7890	2/24	24 4.0	30.9 1.8	5.2		MINHOR LAKE ING FALT	6600 11800	5/53	30 81	7.9 11.99	5.0 [3.0
CARROT BASIN CARROT BASIN PILLOW	7750 9000	3/01 2/25	61 19.1 96 35.0	5.7 9.2	13.9 32.3		MOUSE CHEEK (10) MOULTON RESERVOIR FOUNT LOCKMART	6200 6850	8728 2728	ы3 37	7.1	1.0
CARTER CRECK	9000 7400	3/93	SP 27.9 12 2.6	8.9	23.9		MOUNT LOCKHART PILLOW	6400 6400	3/01	214 514	27 · n	8 • 1 B • 2
CHATEAU LAWN #8 (AL) CHESSMAN RESERVOIR	4100 5700	2/23	38 13.0 33 8.0	3,1	9.2		PT. CISENHOWER #18 (ALF	5000 7650	3/03	70	5 · 1	1.1
CHICKEN CREEK	6200 4060	2/25	22 5.5 46 I5.6	8.4	3.1		HENTON MOUNTAIN NESTON MOUNTAIN NES PERCE CREEK	690# 5600	2/2/1	52 79	30.11	9.1
COLE CREEK PILLOW	7850 7850 6300	2/28 2/28 2/24	41 10.0 SP 9.6	8.4 8.2	-		HOISY HASIM HOISY HASIM PILLOW	6500 6040 6040	2/211 2/21 2/34	51 114 80	7.9 45.0 36.7	2.U
COMBINATION PILLOW	5600 5600	3/01	38 10.1 28 5.9 SI 5.9	2.0	6.7		NOISY CREEK NORRIS BASIN (WY)	3600 7500	2/24 3/01	26	9.2	115.5 11.2 4.0
COCKE STATION COPPER ROTTOM	8150 5200	2/28 3/02	84 27.0	3.5 8.8	1.7.6		NORTH FK. LLK CPEEK NORTH FORK JOCKO	625U	2/27	42 133	13.0	5.5 5.5 23.4
COPPER BOTTOM PILLOW COPPER CAMP	5200 6950	3/02 3/02	SP 12.2	3.8 4.4	30.3		NOPTH MEADON HORTHENST ENTRANCE	7500 7400	2/27 3/62	52 413	7.2	1.5
COPPER CREEK	5700 6100	3/02 3/02	50 10.9	9.6	15.6		OLO FAITHFULIWY) OPHIR PARK	7360 7150	3/02	51	1/1.h	7•0 1•ii 8•6
COPPER MOUNTAIN	7700	2/28 3/01	44 11.7	7.4	22.6		PETERSON MEACONS PETERSON MEADONS PILLON	720II 7200	2/27	35 8P	7. B	5 • 7
CREVICE HOUNTAIN	6400 6100	2/27	40 12.7 56 13.3	6.8	9.2		PICNIC GROUNDS PIPESIONE MASS	6200 7200	3/01	2/l 2/l	6.2	1.8
DAISY PEAK DAIY CREEK	7600 5780	2/2H	57 17.4 46 12.9	5.5	12.3 10.3		PIPESTONE UPPER #2 FALF POORMAN CREEK	5300 5100	5/5%	48	7 · b	4.2
DENOMAL CREEK	5400 6450	2/24	36 11.2 60 22.5	4.4	25.0		PUDRMAN CREEK PILLOW PORCUPINE	5100 6500	3/01	51 ² 34	30.7	11.7
DEADMAN CREEK PILLOW TOSERT MOUNTAIN	6450 5600	2/24	48 15.6 SP 13.7	9.0	11.4 9.8		PORCUPINE PILLOW POTOMAGETOM PARK	6500	2/23	SF	10.4	6.4
DEVILS SLIUE DISCOVERY BASIN	8100 7050	3/01 2/27 2/26	44 15.0 66 21.3	7.0 12.8	14.7 20.2		RED MOUNTAIN RED TOP	7150 6000 5260	2/23	51+ 51+ 7.0	18.5	5.7
ADIX HILL EL DORADO MINE	6400 7800	2/26	35 9.4 37 12.0 60 19.5	5.1 4.4	-		ROCK CREEK ROCK CREEK MENDOWS	5600 5600 8160	2/24	46 69	25 · It 13 · It 20 • 9	9.1 9.1 12.2
FLK PEAK LEMERY CREEK	8000 4350	2/27	60 21.2	7.4 10.8	18.7 15.8		ROCKER PEAK POCKER PEAK PILLOW	8000	2/24	50 31	15.1 14.1	5.1 5.1
EMERY CREEK PILLOW	4350 5500	2/28	SP 14.2	7.6	-		PUCKY HOY ROCKY HOY PILLOU	4700 4700	2/23	51. SP	8.fr	5.11 5.7
TRISH CREEK HEISHER CREEK	8000 9100	2/27	35 7.0	2.5	21.0		SACAJAWEA SHOOLE MOUNTAIN	6550 7940	5\57 5\5H	61 74	£9.0	9.15 7.11
FISHER CREEK PILLOW -FIVE SPRINGS FALLS (WY)	9100 7500	5/28	SP 37.1	17.2	32.6		SAUTOLI, MOUNTAIN PICLON SANTELL ROBOTAIN (10)	7940 8710	2/25	5P 10I	26.1	7.5 7.7
FIVE-BULL FLEECER RIUGE	5700 7500	2/25	31 7.7	2.2	7.4 7.0		SENTINEL CHEEK SHOWER FALLS	8180	2/23	73 81	27.5	9.li 14.7
FROUR MILE Frouktie of July	6900 3450	2/27	48 13.9 34 8.2 34 10.6	3.7	7.6		SHOWER FALLS PILLOW SILVER RUN	810n 6630	5/57	SII 25	23.6	5 u
FRED BURP MASS FREIGHT CREEK	8000 6000	5/50	75 25.6	9.9	23.5				5/50	SP 4B	5.2	2.D
FRIDAY HILL FROMMER MEADOWS	4620 6480	2725 2724	50 16.7 55 19.5	6.2 5.A	14.5		SHUGGLER MINE SOUTH FORK SHIELDS	6960 #100	2/27	46	12.3	3.7 [8.]
"FROHNER LEADOWS PILLOW" GAPVER CHECK	6480 4250	2/27	3/ 9.0 SF 9.1	3.2 3.9			SPOTTED BEAR HOUNTAIN SPUR PARK	7000	2/27	45 70	14.9 25.0	8.0
GAPVER CREEK PILLOW GIBBOUS PASS	4250 7100	2/21 3/01	39 12.6 SP 10.9	2.1 4.7	12.3		SPUR PARK PILLOU STANE FEAK	6050	2/24	SP 90	25.5 34.8	[4.1 15.6
GOAT HOUNTAIN GOLD GREEK LAKE	7000 7200	2/23	70 25.1 46 13.8	5.5 4.0	20.5		STANE PEAK PILLOW STEAMBOAT PURNT (NY)	6050 7500	2/27	5P 35	30.4 0.1	(5.1 7.1
GOLD STONE GRASSHOPPER	9100	3/01	94 13.n 58 18.9	4.0 5.0	13.6		STEMPLE PASS STORM LAKE	6600 7786	2/27	38 49	10.5 12.3	0.0 5.3
GRAVE CHLEK	71/00 4300	2/27	30 8.2 5% 19.1	4.2 6.6	5.1 17.9		STRYKER BASIM STUART MILL	6186 6501	2/22	74 29	27.9 5.1	₽₩. h 2+1
GRAVE CREEK PILLON GRIFFIN CPCEN DIVION GRIZZIN PLAN	1300 5150	2728 2728	SP 17.9	7.14 3.7	11.6		STUART MOUNTHIN	7400	3/03	95 14	36 · II	15.4
GRIZZLY PLAK GUNSJEHT LAKE	6300 6300	2/28	95 38.6	19.3	13.5 39.1		SUCKER CREEK SYLVAN PASS (PY) TAKEHET DAYS (PY)	3960 7100 7000	3/01	60 52	17.8	5.2 li.5
HALVERSON CREEK (10)	4850 5030	2/22	104 39 h 39 15.2		44.3		TAKEHEE PASS (FII) TAYLOR ROAD TEN MILE AUGUST	7000 4080	5/57	33	9.8 7.5	4.4
HANKINS LAFE	5030 6450	2/27	SP 13.9 69 27.8	6.1	26.3		TEN MILE LUWER TEN MILE MEDILE	6800 6800	5/55	29 41	11.4	2.4
HAWKINS LAKE PILLOW HLART LAKE THAIL	6950 4800	3/01 3/83	SP 23.6 62 19.8	5.5	26.4		TEM MILL OPPER TOPEE CREEN	11110U B000	3/0/	47 53	15.7	4 , 7 9 , 5
HELE ROARING DIVIDE	6550 5 77 0	3/01	54 18.9 75 67.4	5.9	10.8 29.1		THUNG DIVIDE THAN	7900	5/3°	9 5 86	211.3	3. 1
HERRIG JUNCTION HIGHWOOD DIVIUE	4850 5650	2/22	67 22.3 44 13.0	11.4			Average based On 1958-72 period. A - Aerial of SP - Snow Pillow observation; water content on	observation; wat	lel content	estimated.		
HINHWOOD STATION	4600	2/27	29 7.4	5.7	-		TOTAL TOTAL CONTENT ON	,	HONTAN	A WATER	SUPPLY O	07LOOK

U.7 18.4 E0.3 84 ° f E5.2 21.11 18.7

5.3 15.1 Fr. 4.5

8.3

33.7

28.7

وبال

17.0

3.5

13.

H • (1

22.7

21.3 21.6 20.13

14.6

37.b

7.4

11.7

11.5

511.9

11.9

13.5

6.4

10.5

14.5

19.0

SHOW			THIS VEAR			ECORD
ORAINAGE BOSIN and or SHOR COURSE		Dire	Snam Depth (Intert)	Welet-Content (Inch+1)		TI I I A Chief I In
HAME	Elevation	el 50***1			Cell year	A session
TUMBERLINE CPCEK	8850	2/25	40	8.6	7.0	12.1
TRIGHUS LAKE	6100	2/25	106	42.5	34°F	39.0
TV MOUNTAIN	6800	12/3	63	19.4	5.5	17,
TWELVEMILE CREEK	5600	5/55	69	24.2 19.2	9.0	18.0
THEFAULTE CHEEK BITTOM	5600	5/55	SP	55.5	8.2 5.0	16.4
THENTY-ONE MILE	7150	3/01	63 40	15.8	6.4	16.
TWIN LREEKS	3580	2/27	113	44.8	16.4	12.3 37.2
THIN LAKES	6510	2/22	511	42.2	15.8	37.7
TWIN LAKES PILLOW	6400	2/22	92	37.5	21.2	33.7
UPPER HOLLAND LAKE	6500	2/27	52	17.2	4.9	15.4
VALLEY VIEW (ID)	5600	3/01	43	13.7	3,4	11.2
VALDRON BILLON	5600	3/01	SP	9.6	4.6	11.9
WAEDRON PILLOW WEASEL DIVIDE	5450	2/27	85	31.7	10.0	32.6
WEST RUSEAUD	7500	2/16	26	7.3	-	9.5
WEST YELLOWSTONE	£700	3/01	4.7	15.1	3.2	10.6
REST YELLOWSTONE PILLOW	6700	2/26	SP	9.6	2.2	7.7
HISKEY CHEEK	6.800	2/24	68	23.8	5.7	18.5
WHISKEY CRECK PILLOW	6800	2/24	SP	18.6	5.1	-
WHITE LLCPHART (10)	7700	2/21	90	31.6	6.11	-
WRITE FILL	8700	5/29	104	32.3	10.4	24.1
WHITE HILL PILLOW	8700	2/28	SP	28.7	11.4	-
VILLOW CREEK	6500	5/56	35	7.7	4.8	-
OFACULUSE (MA)	7650	3/01	54	16.2	4.n 4.5	1.0
IRONG CREEK ∗RONG RIDGE	5 7 00 6800	2/25	47 58	20.2	6.8	14.6 19.3
LATE ARRIVING DATA						
Abundance Lake	8800	3/02	70	22.4	_	17.7
Beagle Springs	8850	3/05	34	8.8	1.7	-/./
Black Mountain	7750	3/06	56	15.5	5.0	_
Call Road	8050	2/28	50	12.6	4.8	9.8
Clover Meadow	8600	2/28	63	17.6	6.6	14.7
Dad Creek Lake	8400	3/03	41	11.4	3.0	11.9
Darkhorse Lake	8600	3/02	85	31.1	10.0	24.2
Divide	7800	2/28	39	11.4	3.2	10.0
Divide Fillow	7800	2/28	SP	10.9	4.2	-
East Fork R. S.	5400	3/03	25	7.2	3.6	6.7
Elk Horn Springs	7800	3/02	46	13.3	3.3	8.4
Foolhen	8280	3/02	57	17.7	6.4	15.6
emhi Pass	7480	3/03	39	10.8	2.5	7.9
emhi Ridge	8100	3/03	46	13.8	2.9	8.9
emhi Ridge Pillow	8100	3/03	SP	12.2	4.1	-
lez Perce Camp	5580	3/03	55	17.3	6.3	13.0
ez Perce Camp Pillow ez Perce Pass	5580	3/03		17.8	6.4	-
ortheast Entrance Pillow	6570 7400	3/03	57 SB	19.7	7.0	14.3
orth Fork Elk Creek Pillow	6250	3/02 2/27	SP SP	13.0 13.7	5.0	8.3
lotch	8500	2/28	55	15.7	5.5	10.9
ickfoot Creek	6650	2/21	41	12.3	5.8 3.6	13.3
kalkaho Summit	7 260	3/03	75	28.4	8.4	23.4
kalkaho Summit Pillow	7260	3/03	SP	26.3	8.7	-
lag-A-Nelt Lake	8750	3/02	79	28.8	7.1	24.8
rail Creek	7090	3/03	39	10.2	2.1	7.1
				21.0		
arm Springs	7800	3/03	64	41.0	-	-

SP - Snow Pillow observation; water content only.

AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES

Water Survey of Canada, Calgary, Department of the Environment

Water Resources Service, Department of Lands, Forests and Water Resources, British Columbia

Alberta Environment, Edmonton, Alberta Federal

Department of the Army - Corp of Engineers

Department of Agriculture - Forest Service

- Soil Conservation Service Department of Commerce - NOAA

Department of Interior

- National Weather Service

- Bonneville Power Administration - Bureau of Indian Affairs

- Bureau of Reclamation

- Fish and Wildlife Service

- Geological Survey - National Park Service

STATE AGENCIES

Montana Conservation Districts

Montana Department of Fish and Game Montana Department of Natural Resources and Conservation

Montana State University - Agricultural Experiment Station

University of Montana - School of Forestry DNRC - State Forester

PRIVATE ORGANIZATIONS

Nontana Power Company

Butte Water Company The Anaconda Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.



RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

Bella by Stream	RESERVOIR	Uleple	U reble Storege				
	ACSURTAIN .	Capelly	This Year	Lori Yee	Averaga		
	COLUMBIA RIV	ER DRAIN	AGE				
Kootenai	Koocanusa	5,694.0	1,591.0	2,770.0			
Flathead	Hungry Horse	3.428.0	1,641.0	2,326.0	2,329.0		
	Flathead Lake	1,791.0	681.2	703.8	1,009.0		
	Camas (4)	45.2	3.3	15.6	24.5		
	Mission Valley (8)	100.3	38.3	46.7	34.9		
Clark Fork	Georgetown Lake	31.0	23.9	28.1	25.3		
	Lower Willow Creck	4.9	1.2	2.6	1.2		
	Nevada Creek	12.6		5.5	5.7		
- 4 - 4	Noxon Rapids	334.6	261.8	290.0	300.6		
Bitterroot	Painted Rocks	31.7	3.9	4.5	21.3		
	Сово	34.9		-	13.7		
	MISSOURI RIV	ER DRAIN	AGE				
Beaverhead	Lima	84.0		47.5	31.9		
	Clark Canyon	257.2	159.0	162.3	141.4		
Ruby	Ruby	38.8	29.8	25.0	27.4		
Madison	Hebgen Lake	337.5	243.2	232.7	202.0		
	Ennis Lake	41.0	35.4	33.0	37.6		
Gallatin	Middle Creek	8.0	3.8	3.6	3.6		

Beaverhead	Lima	84.0		47.5	31.9
	Clark Canyon	257.2	159.0		
Ruby	Ruby	38.8			
Madison	Hebgen Lake	337.5			
	Ennis Lake		35.4		
Gallatin	Middle Creek	8.0			0,.0
Missouri	Canyon Ferry	2,043.0		1.727.0	
	Hauser & Helena	61.9	52.2	61.3	57.4
	Lake Helena	10.4	10.9	10.2	9.0
	Rolter Lake	81.9		79.5	51.2
	Fort Peck Lake	18,910.0	14,000.0	15,940.0	13,110.0
Smith	Smith River	10.6	·	10.5	6.3
	Newlan Creek	12.4	3.9	G.0	-
Musaclshell	Bair	7.0		4.4	4.7
	Martinsdale	23.1		15.4	
	Deadman's Basin	72.2		44.4	46.6_
Sun	Gibson	99.0	26.7		
	Willow Creek	32.2	16.6		
	Pishkun	32.0	18.9		
Marias	Lower Two Medicine	11.9		_	= 1
	Four Horns	19.2		_	
	Swift	30.0	9.7	19.3	17.9
	Lake Frances	111.9	28.1	78.2	78.3
	Elwell (Tiber)	1,347.0	518.8	495.0	576.8
Nilk	Beaver Creek	3.5		2.1	_
	Fresno	127.2	17.8	67.7	56.8
	Nelson	66.8	6.1	45.6	
	HUDSON BAY	RIVER DRA	INAGE		
St. Mary's	Lake Sherburne	66.2	29.8	16.2	21.9
	YELLOWSTONE	RIVER DRA	INAGE		
Stillwater	Mystic Lake	21 0	5.0	1.8	7 0

Average based on 1958-72 period.

Cooney

Tongue River

Big Horn Lake

Clark's Fork

SOIL MOISTURE

PMC Dryland

Tongue

Big Horn





13.1

30.9

820.8

14.6

40.7

870.0

27.4

68.0

1,356.0

14.7

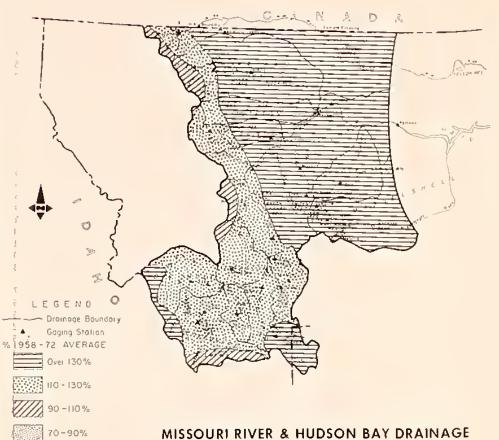
32.6

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TO HE MIZAGE BANKARO		-	le (Inchie)	Dare of	Sall Matrixie (Incher)		
7 800	E evellon	Oepth	Cepecity	Survey	This is	Lett Yes-	• recite 1
	COLUMBIA R	IVER D	RAINAG	F			
Kootenai		. ,		-			13
Baree Trail	3800	48	7.5	2/28	6.5	4.7	6.1
Murphy Lake R. S.	3000	48	22.6	3/1	19.7	19.4	20.1
Raven	3050	48	23.0	3/1	17.5	14.6	18.2
Flathead	3030	9.0	23.0	3/ T	17.3	14.0	10.2
Oesert Mountain	5600	54	8.4	3/1	7.6	E 2	7 2
Marias Pass					7.6	5.3	7.2
	5250	54	6.5	2/26	6.1	4.2	5.3
Clark Fork Black Pine	71.00				- /		7.2
	7100	48	10.0	3/1	7.6	6.5	
Lubrecht Forest	4100	48	26.8	3/2	15.7	14.0	16.1
Seeley Lake R. S.	4030	48	11.9	3/6	9.9	4.8	8.0
Skalkaho Summit	7260	48	10.8	3/3	9.4	8.4	9.6
Bitterroot							26
Gibbons Pass	7100	48	7.1	2/23	5.9	2.9	4.7
Lolo Pass	5250	48	10.6	3/1	7.5	7.4	6.1
	MISSOURI R	IVER D	RAINAG	F			
Beaverhead				_			
Lakeview	6700						
Madison	6700	48	15.3	2/28	12.8	8.1	9.7
West Yellowstone	6700						
Gallatin	6700	48	6.5	2/26	2.6	1.3	2.3
	70.00						
Bridger 8owl	7250	48	17.0	2/28	14.8	15.6	15.9
College Site No. 2 Lick Creek	4856	54	17.7	2/27	13.0	8.6	13.9
	6860	48	18.8	2/27	13.8	12.3	15.4
Twenty-One Mile	7150	48	10.0	2/26	6.2	2.2	4.1
dissouri Main-Stem							
Kinga Bill	7420	48	11.8	2/22	8.3	4.4	6.7
Stemple Pass	6350	48	5.9	2/27	4.2	3.6	4.1
411k							
Beaver Creek	3950	48	20.9	2/28	8.1	9.3	9.8
Rocky Boy	4700	36	10.1	2/23	7.9	7.0	7.1
Y	ELLOWSTONE	RIVER	DRAINA	MGE			
hields							
Battle Ridge	602 0	48	17.6	2/28	15.2	9.6	13.2
pper Yellowstone Northeast Entrance	2024						
larks Fork	7350	48	9.4	3/2	7.9	4.3	5.7

3700 48 20.7 3/6 5.7 5.8 -

Missouri River & Hudson Bay Drainages



MISSOURI RIVER & HUDSON BAY DRAINAGE MONTANA

MOUNTAIN SNOW WATER EOUIVALENT

SUMMARY of SNOW MEASUREMENTS

RIVER BASIN	Numbii ol Cou-rei		AR'S SHOP PERCENT OF
SUB-WA) ERSHED	Avivaged	L 001 Y 1 0*	Avisege F
Beaverhead	20	357	121
Ruby	9	310	120
Big Hole	14	342	125
Boulder	9	332	114
Jefferson	52	340	1.22
Madison	22	342	1.28
Gallatin	18	237	124
Missouri Headwater	92	309	124
West-side Missouri	6	317	113
(Toston-Cascade)			
Smith & Belt Page	6	_21.1	134
Missouri Main Stem	12	241	125
Teton & Sun	- '8	309	116
Marias	4	222	93
Marias-Teton-Sun	12	265	105
Judith	6	175	146
Mosselshell	5	191	135
Judith-Musselshell	11	181	141
Mi 1k	3	222	127
Bear Paws	2	166	176
Missouri Total	130	278	123
SASKATCHEWAN			
St. Mary's	2	378	93
Bow River/Alberta	4	168	88



MOUNTAIN SNOWPACK

JEFFERSON - NEAR TO A LITTLE BELOW AVERAGE IN THE BEAVER-HEAD DRAINAGE. WELL ABOVE AVERAGE ALONG THE MONTANA-IDAHO BORDER IN THE BIGHOLE RIVER HEADWATERS. GENERALLY ABOVE AVERAGE IN OTHER TRI-

BUTARIES.
MADISON - NELL ABOVE AVERAGE
1 ABOVE HEBGEN RESERVOIR AND ABOVE AVERAGE IN TRIBUTAR-IES BELOW HEBGEN.

GALLATIN - VARIABLE, BUT GEN-GENERALLY ABOVE TO WELL ABOVE AVERAGE.

MISSOURI MAIN STEM - WELL ABOVE AVERAGE EAST OF THE MISSOURI RIVER IN THE BELT AND SMITH RIVER DRAINAGES.

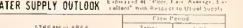
NEAR TO ABOVE AVERAGE ALONG THE CONTINENTAL DIVIDE.

MARIAS-TETON-SUN - NEAR AVERAGE
ALONG THE CONTINENTAL DIVIDE INCREASING TO ABOVE AVERAGE IN SOME OF THE LOWER ELEVA-

JUDITH-MUSSELSHELL - WELL ABOVE AVERAGE IN MOUNTAINS AND IN LOWER ELEVATIONS.

MILK - GENERALLY ABOVE AVERAGE SNOW WITH HEAVIEST AMOUNTS THE WATERSHED AREAS BELOW IN THE BEAR PAW MOUNTAINS:

ST. MARY'S - ABOUT AVERAGE SNOWPACK IN HIGHER ELEVATIONS
WITH A LITTLE ABOVE AVERAGE
IN LOWER ELEVATIONS:





	Flow l*exical				
STREAM OF AREA	Seeran	L ore Search			
Beaverhead	Λv	Αv			
Ruby	Ex	Av			
Big Hole	Ex	Ex			
Boulder	Ex	Αv			
Jefferson	Ex	Λv			
Madison	Ex	Ex			
Gallatin	Ex	Ex			
West-side Missouri	Ex	i\v			
Smith-Belt	Ex	Ex			
Sun	Av	Av			
Teton	Αv	Av			
Marias	Av	Av			
Judith	Ex	Ex			
Musselshell	Ex	Ex			
Milk	Ex	Av			
Bear Paws	Ex	Av			
St. Mary's	Αv	Αv			

IRRIGATION WATER SUPPLY

GENERALLY NEAR AVERAGE LATE SEASON SUPPLIES FROM BEAVERHEAD AND TRIBUTARIES NORTH OF THE

DEARBORN RIVER. ABOVE AVERAGE FROM OTHER DRAINAGES.

STREAMFLOW FORECASTS

JEFFERSON - NEAR AVERAGE IN BEAVERHEAD RIVER DRAINAGE AND 10 TO 20 PERCENT ABOVE AVERAGE ELSEWHERE

MADISON - ABOUT 20 PERCENT
ABOVE AVERAGE.
GALLATIN - ABOVE AVERAGE ON
MOST DRAINAGES, MELL ABOVE
AVERAGE FLOWS FROM BRIDGER
CREEK

MISSOURI MAIN STEM - MISSOURI
HEADWATERS SHOULD PRODUCE
ABOUT 20 PERCENT ABOVE
AVERAGE RUNOFF. TRIBUTARY STREAMS OF THE EAST-SIDE WILL HAVE WELL ABOVE AVERAGE FLOWS WHILE WEST-SIDE STREAMS WILL FLOW NEAR TO ABOVE AVERAGE. RUNOFF IN THE LOWER MISSOUR! WILL BE

20 TO 30 PERCENT ABOVE AVER-

MARIAS-TETON-SUN - NEAR AVERAGE

JUDITH-MUSSELSHELL - WELL ABOVE AVERAGE RUNOFF FROM ALL TRIBUTARIES,

MILK - ABOUT NORMAL DIVERSIONS
FROM ST. MARY'S RIVER COMBINED WITH ABOVE AVERAGE RUNOFF FROM MILK RIVER DRAINAGE
WILL YIELD ABOVE AVERAGE RUNOFF. WELL ABOVE AVERAGE RUNOFF EXPECTEO FROM LOCAL
DRAINAGES THAT FLOW INTO THE DRAINAGES THAT FLOW INTO THE

MILK RIVER.

ST. MARY'S - NEAR AVERAGE WATER
SUPPLY AVAILABE FOR DIVERSION
INTO THE MILK RIVER.

		LOSI	THIS YE		PASE RECORD	
	BASIN STREAM AND OFFORECAST POINT	Thousand Associated	Post est as Arreits	PERIOD	LII-10-	e,
BEAVE	RHEAD RIVER near Grant (1)	145	100	-		_
		130	100 102	Apr-Sept	54.0	
RUBY	RIVER near Alder	107	114	Apr-July Apr-Scpt	37.0	
D.1 Ovro		91.0	115	Apr-July		
BIGHO	LE RIVER near Melrose	880	118	Apr-Sept		
B1 RCH	CREEK near Glen	820	118	Apr-July		
224011	OREEK BEAT GIGH	16.6	121	Apr-Sept		
BOULO	ER RIVER near Boulder	14.0 103	122 115	Apr-July		
		99.0	116	Apr-Sept	30.2	
W1LLO	W CREEK menr Harrison	23.8	126	Apr-July Apr-Sept	27.6	
		21.5	126	Apr-July		
NAD1S	ON RIVER mear Grayling (2)	57.5	120	Apr-Sept	313	
MATHE	ON DIVER	460	123	Apr-July	2 28	
LIMIT 2	ON RIVER near McAllister (3)	1.008	122	Apr-Sept	580	
GALLA	TIN RIVER near Gateway	810	124	Apr-July	4.34	
01,201,11	TIM KINEK HEBE GBEERGY	650 560	122	Apr-Sept		
INFLO	W MIDDLE CREEK RESERVOIR near	32.4	124 115	Apr-July		
Boz	eman (4)	28.0	115	Apr-Sept		
	TE CREEK near Bozeman (5)	50.2	114	Apr-July		
		44.0	115	Apr-Sept Apr-July		
GALLIN	TIN RIVER at Logan	730	127	Apr-Sept		
		630	129	Apr-July		
MISSO	URI RIVER at Toston (6)	2.950	121	Apr-Sept	1,270	2
CURRE	OPPRIL IN .	2,570	122	Apr-July	1.021	2
	CREEK near White Sulphur ings	28.6	139	Apr-Sept	17.8	
	Iver at Gibson Dam (7)	25.0 610	139	Apr-July	15.5	
0014 14	TYPE AC OTOSOIL DAM (7)	560	103	Apr-Sept	205	
BELT	CREEK near Monarch	17.2	140	Apr-July	181	
		160		Apr-Sept Apr-July		
HUSSO	OURI RIVER at Ft. Henton (8)	4,550	123	Apr-Sept		3
m110 :	(Table	3,890	125	Apr-July		3
TWO N	EDICINE CREEK near Browning	275	102	Apr-Sept		3
(9)		245	102	Apr-July		
BREZO	ER CREEK near Browning	131 114	101	Apr-Sept		
MAR1/	AS RIVER near Shelby (10)	600	101	Apr-July	55.6	
7411111	io Arron hear Shelby (10)	570	107	Apr-Sept Apr-July	55.6	
MISSO	OUR1 RIVER at Virgelle (11)	5,200	120	Apr-Sept	38.4	4.
		4,550	122	Apr-July		3,
SOUTH	FORK JUDITH RIVER near Utica	19.3	130	Apr-Sept]
		17.9	131	Apr-July		j
MISSO	OURI RIVER near Landusky (11)	5,550	117	Apr-Sept		4
MOney	L FORM Addison during	4,900	120	Apr-July		4
	FORK MUSSELSHELL RIVER near	9.1		Apr-Sept		
	pine FORK MUSSELSHELL RIVER above	7.9	146	Apr-July		
	tinsdale	75.0 72.0	150 152	Apr-Sept		-
	URI RIVER below Fort Peck	5,600	122	Apr-July Apr-Sept		4,
	(12)	5,000	123	Apr-July		4,
	RIVER at Eastern Crossing	330	115	Mar-Sept		4.
MISSO	URI RIVER near Wolf Point	6,150	126	Apr-Sept		4,
(12)	5,500		Apr-July		4
MISSO	URI RIVER near Williston.	15,100	128	Apr-Sept		11.
	th Dakota (13)	13,500	129	Apr-July		10,

(1) Adjusted for storage in Lima and Clark Canyon Reservoirs.

ST. MARY'S RIVER near Babb (14)

(2) Adjusted for storage in Hebgen Lake.
(3) Adjusted for storage in Hebgen and Ennis Lakes.

(4) Sum of West Fork Hyalite Creek and East Fork Hyalite Creek above Reservoir.
(5) Adjusted for storage in Middle Creek Reservoir.
(6) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.

487 99 Apr-Sept

(7) Adjusted for storage in Gibson Reservoir and diversions.
(8) Adjusted for storage in Canyon Ferry Reservoir.

(9) Adjusted for storage in Two Medicine Reservoir and diversions into Two Medicine Canal.

(10) Adjusted for storage in Two Medicine, Four Horns, Lake Frances, and Swift

(11) Adjusted for storage in Canyon Ferry and Elwell (Tiber) Reservoirs.
(12) Adjusted for storage in Canyon Ferry. Elwell (Tiber), and Fort Peck

Reservoirs. (13) Adjusted for storage in Canyon Ferry, Elwell (Tiber), Fort Peck, Buffalo Bill, Boysen and Big Horn Reservoirs. Sum Yellowstone River near Sidney and Missouri River near Culbertson.

(14) Adjusted for storage in Lake Sherburne.

Average based on 1958-77 period.

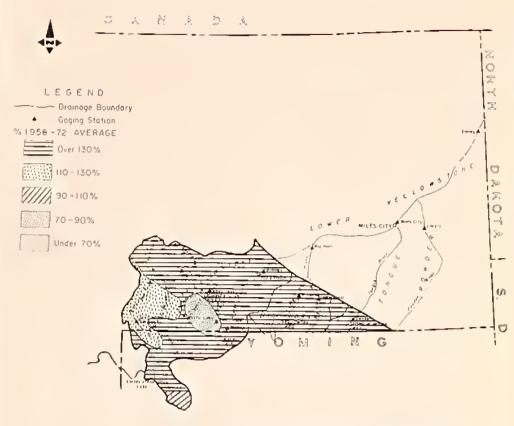
MOUNTAIN SOIL MOISTURE

GENERALLY ABOUT NORMAL EXCEPT FOR BELOW AVERAGE LEVELS IN THE BEAVERHEAD RIVER DRAINAGE AND ALONG THE CONTINENTAL DIVIDE NORTH OF ROGERS PASS.

SOIL MOISTURE IS BASED ON MOISTURE LEVELS AT SOIL MOISTURE STATIONS, FALL PRECIPTATION AND STREAMFLOW LEVELS DURING THE EARLY WINTER PERIOD.

Yellowstone River Drainage

STREAMFLOW FORECASTS



YELLOWSTONE RIVER DRAINAGE

MONTANA MOUNTAIN SNOW WATER EQUIVALENT

SUMMARY OF SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)						
RIVER BASIN	Courses Courses	MATER AS PEACENT OF				
SU8-WATERSHED	Attinged	Lan Year	Average +			
Upper Yellowstone						
(ab. Livingston)	13	276	134			
Shields	7	193	132			
Boulder-Stillwater	2	222	115			
Rock Creek-Clarks						
Fork	7	235	120			
Yellowstone (ab.						
Big Horn River)	29	238	128			
Big Horn/Wyoming	15	211	131			
Little Big Horn	4	121	129			
Big Horn (Total)	26	239	122			
Tongue	6	119	112			
Powder	4	127	106			
Yellowstone						
(Total)	55	238	126			
	MOTIN	TAIN S	SNOWPAG			



UPPER YELLOWSTONE - WELL ABOVE AVERAGE IN MOST AREAS, A LITTLE LESS IN SOME LOWER ELEVATIONS. SHIELOS - WELL ABOVE AVERAGE.
BOULDER & STILLWATER - WELL
ABOVE AVERAGE IN HEADWATERS, NEAR TO BELOW AVERAGE ON NORTHWESTERN FLANK OF BEAR-TOOTH MOUNTAINS IN STILL-

WATER DRAINAGE.

ROCK CREEK & CLARKS FORK - WELL
ABOVE AVERAGE IN HEADWATERS

AREA, BELOW AVERAGE IN RED LOOGE CREEK ORAINAGE. BIG HORN - GENERALLY NEAR OR ABOVE AVERAGE IN WYOMING

HEADWATERS.

LITTLE BIG HORN - SOMEWHAT

VARIABLE, BUT GENERALLY ABOVE AVERAGE.

TONGUE - A LITTLE ABOVE AVERAGE IN BIG HORN MOUNTAINS, HEAVY SNOWPACK IN PRAIRIE AREAS, POWOER - NEAR AVERAGE IN BIG HORN MOUNTAINS, HEAVY PRAIRIE SMOWPACK.





	Flow Prined		
STREAM at AREA	Spring	Lan Senso	
ellowstone			
ellowstone above			
Livingston	Ēж	Ex	
Shields	Ex	Eχ	
Boulder	Ex	Еж	
Sweetgrass-Big Timber	Ex	Ex	
Stillwater	Ex	Ex	
Rock Creek	Ex	Eκ	
Clarks Fork	Ex	Ex	
(ellowstone above			
Big Horn	Ex	Ex	
Big Horn	Ex	Av	
ittle Big Horn	Ex	Αv	
Tongue	Ex	Av	
fongue	Ex	Av	
Powder	Ex	Αv	
nwer Yellowstone	Ex	Ex	

IRRIGATION WATER SUPPLIES

ABOVE AVERAGE LATE SEASON SUPPLIES, EXCEPT FOR AVERAGE OR BELOW FROM SMALL STREAMS ORAIN-

ING THE MORTHEAST FACE OF THE BEARTOOTH MOUNTAINS.

SOIL MOISTURE

GENERALLY BELOW AVERAGE IN ALL AREAS. SOIL MOISTURE IS BASED ON MOISTURE LEVELS AT THE SOIL

MOISTURE STATIONS, FALL PRECIP-ITATION AND STREAMFLOW LEVELS OURING THE EARLY WINTER PERIOD.

UPPER YELLOWSTONE - ABOUT 25 PERCENT ABOVE AVERAGE FOR ALL TRIBUTARIES ABOVE LIVINGSTON.

SHIELDS & SWEETGRASS - WELL
ABOVE AVERAGE RUNOFF,
BOULDER & STILLWATER - WELL
ABOVE AVERAGE IN BOULDER
RIVER ORAINAGE AND HEAO-WATER TRIBUTARIES OF THE STILLWATER. ABOVE AVERAGE FOR STILLWATER RIVER. BELOW AVERAGE FOR LOWER STILLWATER AND ROSEBUD CREEK TRIBUTARIES.

ROCK CREEK & CLARKS FORK -ABOVE AVERAGE FLOW IN BOTH STREAMS, HOWEVER, BELOW AVERAGE RUNOFF IN REO LODGE CREEK DRAINAGE AND OTHER TRIBUTARY STREAMS NEAR REO LODGE

YELLOWSTONE RIVER - ABOUT 25 TO 30 PERCENT ABOVE AVERAGE RUN-OFF FOR ALL STATIONS BELOW LIVINGSTON.

BIG HORN - ABOVE AVERAGE IN WINO
RIVER INCREASING WITH SHOSHONE
RIVER FLOW TO ABOUT 25 PERCENT
ABOVE AVERAGE INTO YELLOWTAIL

RESERVOIR.

LITTLE BIG HORN - RUNOFF SHOULD

BE ABOVE AVERAGE.

TONGUE & POWOER - ABOVE AVERAGE

WITH SIGNIFICANT RUNOFF FROM

LOWER ELEVATIONS AND ABOUT AVERAGE FROM HIGHER ELEVA-TIONS.

	THIS YEAR		A.	PASI RECORD		
	FORF	FORFCAST		THOUSAND ACRE FEET		
BASIN STPEAM AND OF FORECAST POINT	Thousand Assa Fees	Proposition Avitage	PERIOO	Californ	A-stage	
		-				
YELLOWSTONE RIVER at Corwin	2,490	125	Apr-Sept	1,129	1,996	
Springs	2,100	126	Apr-July	942	1,662	
YELLOWSTONE RIVER near Livingston	2,900	125	Apr-Sept		2,317	
	2,420	126	Apr-July		1,926	
BOULDER RIVER at Big Timber	500	132	Apr-Sept		379	
	470	134	Apr-July		350	
STILLWATER RIVER near Absorokce	680	115	Apr-Sept		591	
(1)	570	115	Apr-July		494	
CLARKS FORK RIVER near Belfry	780	129	Apr-Sept		607	
•	700	128	Apr-July		546	
ROCK CREEK near Red Lodge	142	129	Apr-Sept	61.0	110	
	108	1.29	Apr-July	45.0	84.0	
INFLOW COONEY RESERVOIR near	39.0	76	Apr-Sept		51.5	
Boyd (2)	31.0	7.5	Apr-July		41.1	
YELLOWSTONF RIVER at Billings	5,400	127	Apr-Sept	2,178	4,246	
	4,700	130	Apr-July	1,822	3,613	
BIG HORN RIVER near St. Xavier	2,300	124	Apr-Sept	618	1,849	
(3)	2,120	124	Apr-July	559	1,706	
LITTLE BIG HORN RIVER near	168	115	Apr-Sept		146	
Lodgegrass (4)	150	116	Apr-July		129	
YELLOWSTONE RIVER at Miles City	8,000	125	Apr-Sept		6,378	
(5)	7,100	128	Apr-July		5,555	
YELLOWSTONE RIVER at Sidney	8,550	128	Apr-Sept		6,665	
(5)	7,700	131	Apr-July		5,895	

(1) Adjusted for storage in Mystic Lake.

(2) Sum of Red Lodge Creek above reservoir and Willow Creek near Boyd.

(3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake and Big Horn. (4) Sum Little Big Horn below Pass Creek and Lodgegrass Creek near Wyola.

(5) Adjusted for storage in Buffalo Bill, Boysen and Yellowtail Reservoirs.

Average based on 1958-72 period.



MANAGEMENT OF WATER SUPPLIES by Phillip E. Farnes Snow Survey Supervisor

The water supply is a limited resource. There is variation from year to year, but there is little opportunity to increase the total supply. As competition for this finite supply increases, the need for better management also increases. available, but it's distribution is such that it cannot all be used bene-

During the spring snowmelt there is generally too much water. Uses during this period are small. During the irrigation season streamflow is low and demands are high.

Some years, like the early 1970's have large amounts of runoff, others like 1977 are extremely low. The ability to predict these flows in advance is one step toward improved water management.

In our contacts with cooperators we see opportunities for improving irrigation water management and improving reservoir operation.

Better irrigation water management could increase yields, reduce drainage problems, and improve water quality. During last year's low water supply, many farmers and ranchers obtained good yields with less water than they have been

accustomed to using.

Reservoirs can be operated to provide more flood control, reduce maintenance costs on downstream structures, provide more water for irrigation, improve downstream water quality without any significant incr ating costs while still providing a full water supply.

Basic data needs are also changing to meet new demands. Snow survey crews on snowshoes or skis are being assisted by automated sites and radio telemetry. SNOTEL (Snow Survey Telemetry) is being installed at 63 sites in Montana. Twice each day the water content of the snowpack, total precipitation, and air temperature will be transmitted using meteor burst communications.

This data will enable our unit to provide current information on the mount tain snowpack. Forecasts can be updated more frequently. Manpower presently required to make manual snow surveys will be reduced as SNOTEL is implemented.

If you would like to discuss methods to improve the management of your water supply or have any questions relating to snow surveys or water supply forecasts, contact your local Conservation District Office.

